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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ali-Reza Adl-Tabatabai

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EXAMINER

MITCHELL, JASON D

ART UNIT

PAPER NUMBER

2193

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/748,875	Applicant(s) ADL-TABATABAI ET AL.	
	Examiner Jason Mitchell	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,7-9,11,19,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-9,11,19,23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to an amendment filed on 2/26/08.
2. Claims 1-2, 7-9, 11, 19 and 23-24 are pending in this application.

Response to Arguments

3. **Applicant's arguments filed 2/26/08 have been fully considered but they are not persuasive.**

In the par. bridging pp. 17 and 18, the applicants state:

While the Examiner cites End for disclosing one or more of these elements, Applicants disagree that End discloses each of these elements as cited above. Applicants concede that End discloses the use of a hash table, but do not see where in End a hash table is used in the manner cited in the claims.

Initially it is noted that this assertion fails to meet the requirements of 37 CFR 1.111(b) (i.e. "The reply must present arguments pointing out the specific distinctions believed to render the claims ... patentable over any applied references") and thus are not persuasive. Further, as detailed in the rejection below, End's use of a hash table for compression of data is not patentably distinct from the claims.

In the 2nd to last par. on pg. 18, the applicants state:

The Examiner asserts that [the claimed generating one or more client uncompressed event data] element is disclosed by Swoboda at column 8, lines 40-53 ("Trace displays are automatically correlated to the source code that generated the trace log"). However, it is unclear how this amounts to "generating one or more client uncompressed event data", as required by the claims, and furthermore, how a

Art Unit: 2193

"trace display" is analogous to "client uncompressed event data", and "trace log" is analogous to "uncompressed event data". Applicants submit that this element is simply not present in Swoboda.

The examiner respectfully disagrees. In par. [0029] of the specification as originally filed the applicants disclose "an event may comprise ... a branch event" and "A branch event may record the outcome of the execution of a branch instruction. A sequence of consecutive branch events may be recorded by PMU 204 to forming [sic] a program path profile, also known as (or a branch trace) [sic]". Accordingly Swoboda's "trace" data is properly read on the claimed "event" data.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 120A and 1226 (see par. [0096]).
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors (e.g. the above objections to the drawings). Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

7. Claim 23 is objected to because of the following informalities: In lines 6, 12 and 17 the claim recites "the instructions comprising result in:" It is believed this should read "the instructions result in". Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by US 6,912,675 to Swoboda (Swoboda).**

10. **Claim 8:** Swoboda discloses a method comprising:

reading one or more processed event records from an event buffer, each processed event record including one or more processed event data corresponding to one or more uncompressed event data (col. 17, lines 39-43 “the trace export portion includes a FIFO buffer”); and

generating one or more client uncompressed event data corresponding to the one or more uncompressed event data (col. 8, lines 40-53 “Trace displays are automatically correlated to the source code that generated the trace log”), said generating one or more client uncompressed event data including one of:

decompressing an event datum if the event datum is in a compressed format; and

outputting an event datum if the event datum is not in a compressed format (col. 8, lines 40-53 “Trace displays are automatically correlated to the source code that generated the trace log”).

11. Those of ordinary skill in the art would have recognized the necessity of uncompressing compressed data in order to present it in the disclosed debug interface (see e.g. col. 8, lines 40-53).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 1-2, 7, 9, 11, 19 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,912,675 to Swoboda (Swoboda) in view of US 6,624,762 to End (End).**

14. **Claim 1:** Swoboda discloses a method comprising:

reading one or more event data, the one or more event data corresponding to an event monitored from a system (col. 7, lines 6-20 “four different classes of trace data”);

for each event datum, compressing the event datum if the event datum is determined to be compressible (col. 15, lines 28-49 “If any compression is applicable ... applies such compression to the new data”);

creating a processed event record, the processed event record conforming to a record format (col. 15, lines 28-49 “outputs the compressed data to a packet builder”);
and

storing the one or more event data in the processed event record in accordance with the record format (col. 15, lines 28-49 “inserts the compressed data into appropriate packets”).

15. Swoboda does not explicitly disclose a compression algorithm generating a hash value to be mapped to a dictionary index.

End teaches a compression algorithm including:

generating a hash from a value (col. 5, lines 5-14 "Hash Index: A value obtained by executing a recursive hash calculation on a succession of string bytes presented as input data for compression");

mapping the hash to a dictionary index in a dictionary, the index corresponding to a dictionary entry (col. 5, lines 15-25 "Hash Table: ... The calculation yields an address into the table and the table provides ... the code word assigned to that string"); and

if the dictionary entry corresponds to the given event datum, then outputting the dictionary index (col. 7, lines 28-45 "An interface 216 comprising assembled code words exists between LZW Code Word Assembly Processor 206 and an output file 217"; also note col. 12, lines 5-13 where a failed match results in a "REHASH" command in stead of output).

16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace or augment Swoboda's compression algorithms (see e.g. Col. 16, lines 3-6) with End's compression algorithm (see e.g. Fig. 3) as a known and obvious alternative method of providing the required functionality (i.e. data compression). This combination would produce only the known and expected benefits associated with the individual compression algorithms.

17. **Claim 2:** Swoboda further discloses “if no data compression is applicable ... the compression determiner 125 passes the new data in its original, uncompressed form to the packet builder” (see col. 15, lines 28-49). Those of ordinary skill in the art would have recognized that this disclosure would result in a completely uncompressed event record if none of the event data were compressible, a completely compressed event record if each of the event data were compressible, and a mixed or “hybrid” event record if some but not all of the event data were compressible.

18. **Claim 7:** Swoboda further discloses if the dictionary entry does not correspond to the given event datum, then outputting the given event datum (col. 15, lines 28-49 “if no data compression is applicable passes the new data in its original, uncompressed form to the packet builder”).

19. **Claim 9:** The Swoboda-End combination discussed in the rejection of claim 1 would require in the claimed decompression steps to present the trace data in Swoboda’s debug interface (e.g. col. 8, lines 40-53).

20. **Claim 11** recites limitations addressed in the rejection of claim 1 wherein the limitations are implemented in circuitry (see Swoboda col. 4, lines 13-15 “The on-chip debug component of the present invention”).

21. **Claim 19** recites limitations addressed in the rejection of claim 1.
22. **Claims 23-24** recite limitations addressed in the rejection of claim 2.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bullock Lewis can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2193

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Mitchell/
Jason Mitchell

/Lewis A. Bullock, Jr./
Supervisory Patent Examiner, Art Unit 2193
5/26/08